

15. THE STATUS OF THE CEYLON FROG  
*RHACOPHORUS NASUTUS* (GUNTHER)

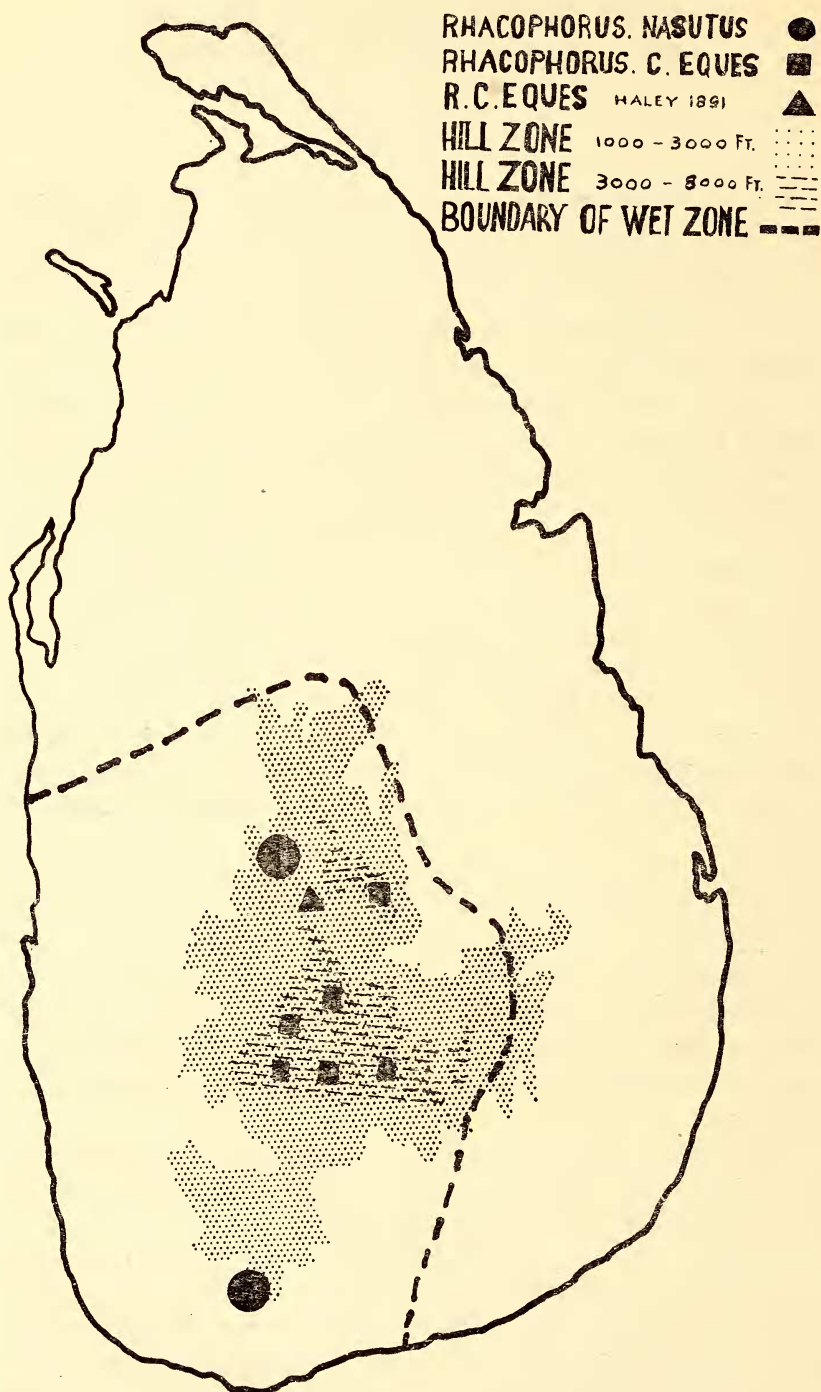
(With a map)

The description of *Rhacophorus nasutus* was based on a single, adult female specimen whose origin was stated as south Ceylon. In 1871 a second specimen, also an adult female without precise locality data was discovered. Both these specimens were deposited in the collection of the British Museum. From 1868, until Wolf (1936) undertook his revision of the genus *Rhacophorus*, *R. nasutus* was considered a valid species. Wolf, without any conclusive reasons regarded *R. nasutus* as a variant of *R. eques* Gunther, and tentatively placed it within the synonymy of the latter. De Silva (1955) apparently accepted Wolf's demotion of *R. nasutus*, as he makes no mention of the species in his paper. In 1957 Kirtisinghe reduced *eques* to sub-specific rank and included *nasutus* in the synonymy of his *R. cruciger eques*. Although the type and one other example of *nasutus* were available to Kirtisinghe he apparently believed that the points of difference between *nasutus* and *eques* were too insignificant to justify *nasutus* as a distinct form. As he probably had no evidence of the ecology nor of the geographical distribution of *nasutus*, it is perhaps understandable that he hesitated to resurrect *nasutus*. His description of *eques*, however, takes no account of the features or coloration of *nasutus*.

Recently (1964, 1965, 1967) the author and Mr. V. Athukorale obtained eight adult males from the lower Matale area and from the Kanneliya forest area, both localities within an ecological zone different to that within which *eques* is known to occur. A comparison with the British Museum material of *nasutus* and *eques* leaves no doubt as to the distinctiveness of *R. nasutus* which can be readily distinguished from *eques* on colour pattern, proportions and snout shape.

Both species seem to inhabit the wet zone of Ceylon which was defined by Cooray (1948) as having an effective rainfall through all months of the year and over 90 inches annually.

The zone of *R. c. eques* is confined to the Central Hills at an elevation of over 2,500 feet, and all records, i.e., Elkaduwa, Wattagama, Lindulla, De Silva (1955); Nuwara Eliya, Uda Pusellava, Diyatalawa, Haggalla, and Nau Oya, Kirtisinghe (1957); are at elevations of over 3,000 feet. Hiley (1891) records it from Kandy,



Map showing the recorded distribution of *R. nasutus* and *R. c. eques*

though Kandy does lie within the Central Hills and possibility of a straggler from the surrounding hills does exist, the low elevation of this area 1000 feet, above m.s.l. leaves this record open to doubt.

The specimens examined indicate that *R. nasutus* lives at a lower level than *R. c. eques*, its range seems to be in the western and southern part of the low wet hills of the second/third peneplain which surround the central hill zone and has so far been recorded from elevations below 1,500 feet.

### ***Rhacophorus nasutus* (Gunther)**

*Polypedates nasutus* Gunther 1868, p. 486, p. 39, fig. 2.

*Rhacophorus nasutus* Boulenger 1882, p. 85 and 1890, p. 476.

*Material examined*: Adult ♀ Holotype, 68·5:13·16; 1947·2·8·61 from the south of Ceylon; Adult ♀ B. M. 71·12·14·37 from the south of Ceylon; Eight adult ♂♂ from Lower Matale and Kanneliya Forests, Ceylon.

### *Diagnosis*

Small to medium sized frogs similar to *R. eques* both in size and habits, but differing from this species by possessing a more elongate snout terminating in a pointed dermal flap. The ratio of snout to inter-orbital distance ranging from 1·84 to 1·90 while it is 1·18 to 1·24 in *R. eques*. The pigmentation under the throat in both males and females of *R. nasutus* form a regular pattern which is absent in *eques*.

### *Description*

Habit slender, snout long and narrow, terminating in a very sharp point formed by a dermal flap similar to the 'spurs' on its heels. Nares open laterally, their distance from the tip of the snout about half their distance from the anterior border of the eye. Canthus rostralis curved, loreal region oblique, the snout in profile projects well beyond the lower jaw. The distance from the tip of the snout to the anterior border of the eye is about twice the width of the eyelid. The tympanum is half the distance from the nares to anterior border of the eye. Choanae elliptical, vomerine teeth never projecting beyond the level of the posterior border of choanae. Tibio-tarsal articulation of the adpressed hind limb reaches the tip of the snout or between nostril and snout tip.

Fingers not webbed, disks of the fingers are large, diameter of disks of the 3rd finger equal to distance from tip of snout to nares.

The toes are about half webbed. The free phalanges on each toe being as follows:—

1st	2nd		3rd		4th		5th
	Int	Ext	Int	Ext	Int	Ext	
$1\frac{1}{2}$	2	$1\frac{1}{2}$	2	$1\frac{1}{2}$	$2\frac{3}{4}$	$2\frac{3}{4}$	$1\frac{1}{2}$

The heel bears a dermal flap which is pink to red in life, a small inner metatarsal tubercle is present and is equal in size to the subarticular tubercle under the first toe.

Skin smooth above with a narrow glandular fold which runs from behind the eye, above the tympanum to the shoulder. Ventrally the skin is smooth on the throat but finely granular on the belly. The lower sides of the thighs bear large whitish tubercles, those below the anus, usually a series of four or five, being the largest.

The ground colour in life varies from an olive-green to grey above broken by a band of brown sometimes edged with pink which passes from the tip of the snout, bifurcates over the snout, above the eyes passes over each eyelid to run parallel to each other along the body. A fine, dark, median line is usually present between these bands. A chocolate black band bordered above by the dorso-lateral fold runs from tympanum to the flanks, below this dark band there is a prominent white band which runs from below the eye to the groin; occasionally a longitudinal row of small dark spots is present above the dorso-lateral fold. Lower parts a uniform yellow; throat pattern comprising of median streak or twin lines which usually extend from the edge of the lip to the thoracic region; on each side of this dark streak a long series of ocelli or streaks. Lower lips dark. On ventral surface close to the axillae a dark oval blotch or dark streak.

#### *Secondary Sex Characters*

All males possess a nuptial pad at the base of the first finger which is finely pigmented, and an internal vocal sac which opens into the floor of the mouth by a pair of openings at the angles of the jaws. The body size of the males vary from 41-47 mm., while the female specimens are 57-60 mm. This may indicate a sex difference in body size. But more female specimens would be needed to confirm this.

#### *Comparison*

In addition to the material of *Rhacophorus cruciger eques* in the British Museum of Natural History, private collections of the author

and of Mr. V. Athukorale were examined to ascertain the difference between *eques* and *nasutus*. In all the specimens of *eques* the inter-orbital distance was more than half the length of the snout and the dermal flap at the end of the snout was lacking. The ratio of the length of the snout to snout-vent distance in all specimens of *R. nasutus* was 4.1 to 4.5 while in *R. c. eques* it was 5.4 to 6.0. The choanae in *eques* is rounded with the vomerine teeth usually projecting beyond the level of the posterior borders of choanae while in *nasutus* the choanae are elliptical and the vomerine teeth never project beyond the level of the posterior borders of the choanae. The pigmentation on the throat of *nasutus* which runs into a constant pattern is never present in *eques*. In *eques* if pigment is present at all it is in the form of a fine speckling on the throat or as a dark thoracic streak below the corocid humeral region. Another salient feature is the markings on the back which are remarkably constant in both species, *R. c. eques* possessing a dark hour-glass shaped marking which commences at the level of the eyes to terminate at the sacral region, in contrast to the parallel lines of *nasutus*. The tibio-tarsal articulation of the adpressed hind limb which reaches to the naris or between the nares in *nasutus* reaches to the eye or only barely between the eye and the nares in *eques*.

#### *Habits and Habitat*

All the specimens of *R. nasutus* were collected on bamboo, *Ochlandra stindula*, which is the characteristic vegetation of this zone, Leiter (1948). They favour dark forests with thick undergrowth and are found at a height of about eight to ten feet from the ground. All the male specimens collected were silent and no call has been recorded yet.

#### ACKNOWLEDGEMENTS

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# 16. ON A RECORD OF THE BLENNIID FISH *CRUNATUS DEALMEIDA* (SMITH) FROM INDIAN WATERS

(With a photograph)

Five male and three female specimens of *Crunatus dealmeida* (Smith) were noted in a collection of fish from the east coast of India made by Mr. N. V. Subba Rao of the Zoological Survey of India between November-December 1964. The species was collected at Upputeru, a backwater canal near Nizampatnam (15° 54' N., 80° 43' E.), 3 km. from the coast. This is the first record of *C. dealmeida* from the Indian seas; the species being known so far only from South Africa.

Sexual dimorphism is evident. The female can be distinguished by the greater length of the caudal and the pelvic fins in relation to standard length and the greater width of the body. A dark mark on the last three dorsal rays further distinguishes the males. Detailed descriptions of the male and the female are given below.

## *Crunatus dealmeida* (Smith)

1949. *Omobranchus dealmeida* Smith, *Ann. Mag. Nat. Hist.* (12), 2, p. 104 (Type locality : from a rock-pool, Ponte Maone, Delagoa Bay).
1959. *Crunatus dealmeida* Smith, *Ichthyol. Bull. Rhodes Univ.* 14, p. 234, pl. 19, A.
1965. *Omobranchus dealmeida* Smith, *The Sea fishes of S. Africa*, 5th ed., p. 507 pl. 76, p. 344.